BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Foundation Diploma in Engineering Pearson BTEC International Level 3 Diploma in Engineering Pearson BTEC International Level 3 Diploma in Electrical/Electronic Engineering Pearson BTEC International Level 3 Diploma in Mechanical Engineering Pearson BTEC International Level 3 Diploma in Digital Engineering Pearson BTEC International Level 3 Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Diploma in Aeronautical Engineering Pearson BTEC International Level 3 Extended Diploma in Engineering Pearson BTEC International Level 3 Extended Diploma in Electrical/Electronic Engineering Pearson BTEC International Level 3 Extended Diploma in Mechanical Engineering Pearson BTEC International Level 3 Extended Diploma in Digital Engineering Pearson BTEC International Level 3 Extended Diploma in Manufacturing Engineering Pearson BTEC International Level 3 Extended Diploma in Aeronautical Engineering
Unit number and title	**Unit 43: Manufacturing Computer Numerical Control Machining Processes**
Learning aim(s)	**D:** Review the processes used to machine a component and reflect on personal performance
Assignment title	Reviewing CNC processes and lessons learnt
Assessor	
Issue date	
Hand in deadline	
Vocational Scenario or Context	You are working as a trainee CNC operator for a company that manufactures complex components that would be difficult to manufacture using traditional methods. Your supervisor would now like you to produce a reflective report, based on what happened when you programmed, set-up, simulated, carried out and quality checked the CNC machining of a component, in which you identify what went well, what could have gone better and what you can take forward to the next stage of your development as an engineer.

Task 1	You are going to review and reflect on the practical activities you carried out for Assignment 2. You now need to produce a report that includes the 'lessons learnt' during the activities. **To do this:** You will need to collate your evidence from Assignment 2. You should then review and reflect on the activities that you completed and the behaviours that you showed when you programmed, set-up, simulated, carried out and quality checked the CNC machining of a component. Your report should: • Review and reflect on the full range of activities that you completed. You should include information about the actions you took to ensure health and safety in the workplace, and how you effectively developed and applied general engineering and programming and machining skills to a professional standard. You need to consider the effectiveness and efficiency of your programming, the setting-up and operation of machinery and issues relating to sustainability. Ensure you demonstrate a good technical understanding and analysis of CNC programming and machining processes. • Review the engineering behaviours you used, and how successfully/consistently/professionally they were applied, including taking initiative and responsibility, communication and literacy skills, and your ability to solve problems. • Suggest and recommend improvements that could be made when carrying out similar activities in the future, especially related to: ● The set-up documentation, programming and the use of the machining processes and equipment to manufacture the component more efficiently and accurately while considering sustainability ● The application of the relevant behaviours. Your report should include correct technical language and clearly differentiate between fact and opinion.
Checklist of evidence required	A report attached to the portfolio from Assignment 2 that reviews the processes used, reflects on own performance and provides a conclusion focusing on the improvements that could be made.

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria you must show that you are able to:
43/D.D3	Demonstrate consistently good technical understanding and analysis of CNC programming and machining processes, including the application of relevant behaviours and general engineering skills to a professional standard
43/D.M5	Recommend improvements to the set up and use of CNC programming and machining processes and to the relevant behaviours applied
43/D.P6	Explain how health and safety, CNC programming, machining and general engineering skills were applied effectively during the manufacturing process
43/D.P7	Explain how relevant behaviours were applied effectively during the manufacturing process
Sources of information to support you with this Assignment	**Books** Smid P; CNC Programming Handbook, 3rd Edition (Industrial Press, 2007); ISBN 9780831133474. Smid P; CNC setup for Milling and Turning: Mastering CNC Control Systems (Industrial Press Inc., 2010) ISBN 9780831133504 **Websites** haas.co.uk website.denford.ltd.uk techsoft.co.uk fanuc.eu/uk/en heidenhain.co.uk